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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,180	09/30/2003	Toshio Tsujimoto	243214US0X	1265
22850	7590	11/29/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			SONG, MATTHEW J	
			ART UNIT	PAPER NUMBER
			1722	
DATE MAILED: 11/29/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/673,180	TSUJIMOTO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Matthew J. Song	1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 28 October 2005.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-15 is/are pending in the application.  
 4a) Of the above claim(s) 1-11 and 15 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 12-14 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                                |                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                           | Paper No(s)/Mail Date: _____                                                |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/17/2004</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|                                                                                                                                                | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

*Priority*

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 10/9/2002. It is noted, however, that applicant has not filed a certified copy of the 2002-295832 application as required by 35 U.S.C. 119(b).

*Election/Restrictions*

2. Applicant's election with traverse of Group II, claim 12-14 in the reply filed on 10/28/2005 is acknowledged. The traversal is on the ground(s) that the claims are interdependent and the Office has not shown that a burden exists in searching all of the claims. This is not found persuasive because a serious burden exists in the differing issues likely to arise during the prosecution of the different statutory classes of invention. Also, the Office has provided reasoning to support the Office's position of patentable distinctness. In regards to applicant's argument that to simply allege that the product can be made by another materially different process without substantiating with a reference is simply not sufficient is noted, but is not found persuasive because the Examiner is not required to provide references to support the restriction requirement (MPEP 803).

The requirement is still deemed proper and is therefore made FINAL.

3. Claims 1-11 and 15 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 10/28/2005.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 12 recites, “ fine quartz glass” in line 2. The term “fine” is indefinite because it is unclear what the difference between fine and course is.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what the “whole” is intended to mean. It is unclear if the “whole” means the (1) whole interior surface, (2) the whole outside surface, or (3) the whole interior and outside surface.

***Claim Objections***

6. Claim 12 objected to because of the following informalities: Claim 12 recites, “wherein the fine quartz glass powder” in line 2. There is not antecedent basis for “the fine quartz”. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukui et al (US 2002/0017114 A1) in view of Loxley et al (US 5,389,582).

In a method of forming a quartz crucible using quartz powder, note entire reference, Fukui et al discloses forming a quartz glass crucible using quartz glass powders for forming an outside surface layer of the crucible and for forming the inside surface layer of the crucible (Abstract, [0047] and claims 8-9).

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Fukui et al does not teach using fine quartz glass.

In a method of forming quartz crucibles using quartz powders, note entire reference,

Loxley et al teaches a method of forming quartz glass crucibles using a slurry comprising crystalline silica particles (e.g., alpha quartz) with an average particle size from 1-10 microns (Abstract and col 3, lines 1-67), this is interpreted to read on applicant's fine quartz particles because of the range used by applicant's in claim 14.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Fukui et al because Loxley et al teaches using 1-10 micron quartz particles makes it possible to produce reliable crucibles of transparent bubble-free quartz glass, which can be readily converted to cristobalite (col 3, ln 1-25).

Referring to claim 13, the combination of Fukui et al and Loxley et al teaches forming at least a part of the inside surface of crucible is made by using quartz powder ('114 claim 8). The combination of Fukui et al and Loxley et al does not teach a ring configuration on a part of the inside surface being not contacted with a molten silicon. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Fukui et al and Loxley et al by coating with quartz powder in a desirable location of the crucible since any part of the interior would have been obvious in view of the teaching of combination of Fukui et al and Loxley et al.

Referring to claim 14, the combination of Fukui et al and Loxley et al teaches 1-10 micron particles ('582 Abstract). The claim does not require the presence of coarse particles because coarse silica has a size of less than 150  $\mu\text{m}$ , which encompasses fine particle size since there is no lower bound. Furthermore, it would have been obvious to a person of ordinary skill in

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the art at the time of the invention to modify the combination of Fukui et al and Loxley et al by optimizing to obtain the claimed amount of fine and coarse particles by conducting routine experimentation.

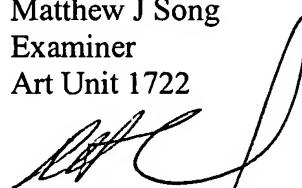
***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Song whose telephone number is 571-272-1468. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Matthew J Song  
Examiner  
Art Unit 1722



ROBERT KUNEMUND  
PRIMARY EXAMINER

MJS